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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,494	04/30/2002	Robert W. Bruce	13DV-13485	4311

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EXAMINER

MEEKS, TIMOTHY HOWARD

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,494

Applicant(s)

BRUCE ET AL.

Examiner

Timothy H. Meeks

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4,8-15,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 16-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0602. 6) ☐ Other: .

Application/Control Number: 10/063,494

Page 2

Art Unit: 1762

DETAILED ACTION

Claim Rejections - 35 USC § 103

Claims 1, 8-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway et al. (6,319,569).

Callaway et al. disclose a method for coating gas turbine components comprising placing the components in a EBPVD chamber, projecting an electron beam on a crucible of YSZ to melt and evaporate the YSZ and form a material on the substrate, and maintaining the substrate temperature constant at 1700 to 2000 °F (about 926 to about 1096 °C) by a cover above the substrate made of copper or steel (heat reflecting shield) with or without cooling means (col. 2, line 19 to col. 4, line 30). It is disclosed at col. 1, lines 25-40 that the cover is provided to control temperature because buildup of deposits on the chamber wall during coating operations acts as an insulation and thereby causes a temperature rise as deposition proceeds.

Callaway does not explicitly disclose the steps for coating the "at least a second article" as claimed wherein a lower heat transfer rate from the coating chamber and ceramic material is used than that for a "at least a first article". However, one would clearly seek to coat more than one substrate in the chamber and hence would use the apparatus to coat "at least a second article" so as to produce multiple coated articles and fully utilize the apparatus and given the disclosure at col. 1, lines 25-40 of the insulating effect of accumulating deposits raising the article temperature as deposition proceeds, one would clearly operate the reflective cover of Callaway when coating the second article so as to produce less heat transfer from the chamber and ceramic material during coating of the "at least a second article" so as to maintain the temperature in the desired range.

Claims 2, 14, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway et al. (6,319,569) in view of Aichert et al. (4,182,448).

Callaway does not disclose preheating the article prior to placing it in the coating chamber. However, given the advantages taught by Aichert at col. 1, line 65 to col. 2, line 17 for doing the preheating prior to placing the article in the EBPVD chamber, it would have been obvious to so preheat the articles of Callaway so as to achieve these advantages.

Claims 3, 4, 12, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Callaway in view of Aichert as above, and further in view of EP 969117 (EP '117).

The above-applied art does not explicitly disclose the preheat temperature of 1,100 °C or using YSZ having 7 wt percent yttria. However, because EP '17 discloses that preheating to 1,100 °C prior to EBPVD of YSZ has a "positive effect" (0022) and that preferred amounts of yttria are in the range of 4-8% which includes 7% (0017), it would have been obvious to use this preheat temperature and amounts of yttria disclosed in EP '117 so as to achieve the advantages taught therein for using these values for these parameters.

Allowable Subject Matter

Claims 5-7 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:
The prior art does not teach or suggest to control the temperature by the methods of these claims.

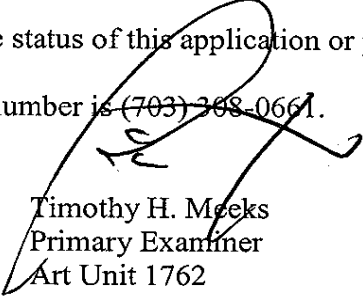
Application/Control Number: 10/063,494
Art Unit: 1762

Page 5

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy H. Meeks whose telephone number is (703) 308-3816. The examiner can normally be reached on Mon., Tues., Thurs.(6-6:30), Fri.(6:30-10:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Timothy H. Meeks
Primary Examiner
Art Unit 1762